

REMARKS

Status of claims

Claims 1-3 and 6-22 are pending, of which claims 1 and 16 are independent.

Claims 1 and 16 have been amended to more clearly define the intended subject matter. Since no new matter or new consideration requiring a new search has been introduced, entry of the amendment is respectfully solicited.

Claim Rejection - 35 U.S.C. § 102

Claims 1-3 and 10-13 were rejected under 35 U.S.C. § 102(b) as being anticipated by Asao et al. (US 6,377,030). The corresponding method claims were also rejected under 35 U.S.C. § 102(b) as being anticipated by Asao et al. Applicants respectfully traverse these rejections.

In page 3, lines 14-20 in the outstanding Office Action, the Examiner asserts that FIG. 21 (items 713 and 704) and column 21, lines 7-59 of Asao disclose a controller and charge/discharge selector such that when the battery detected voltage exceeds the threshold, the battery is discharged and when the detected voltage is less than the threshold, the battery is discharged. The Examiner further asserts that “based on an output of said comparator, said charge/discharge controller causes said electrochemical device to be charged when the voltage is lower than said threshold value and causes said electrochemical device to be discharged when the voltage is higher than said threshold value.”

However, Applicants respectfully submit that, at a minimum, Asao fails to disclose that *“said power system further comprises a comparator that compares the voltage of said electrochemical device with said threshold value, wherein based on an output of said*

comparator, said charge/discharge controller causes said electrochemical device to be charged whenever the voltage is lower than said threshold value and causes said electrochemical device to be discharged whenever the voltage is higher than said threshold value so that the voltage of said electrochemical device approaches said threshold value” as recited by amended claims 1 and 16.

Applicants note that in Asao, a charge operation is performed not only when the voltage is higher than the “inflection point,” i.e., a threshold value, but also when the voltage is lower than the “inflection point.” For example, according to FIGS. 10 and 12 of Asao, the charge and discharge operations are performed as follows (see, column 18, lines 10-22 of Asao):

- (i) storage quantity 0 to 25%: charge
- (ii) storage quantity 25% to 15% (-10%): discharge
- (iii) storage quantity 15% to 45% (+30%): charge
- (iv) storage quantity 45% to 30% (-15%): discharge
- (v) storage quantity 30% to 100% (+70%): charge

Here, according to FIG. 10, the storage quantity 25% and the storage quantity 45% corresponds to the first inflection point and the second inflection point, respectively. It is clear that even if the storage quantity is more than the first inflection point (25%), the charge operation is performed (see, (iii)) and even if the storage quantity is less than the first inflection point (25%), the discharge operation is performed (see, (ii)). With respect to the second inflection point (45%), even if the storage quantity is more than the second inflection point (45%), the charge operation is performed (see, (v)) and even if the storage quantity is less than the second inflection point (45%), the discharge operation is performed (see, (iv)). FIGS. 13-20 of Asao also disclose that the charge operation is performed to an electricity quantity of 55% or more in

the final charge, and the battery will not be discharged when the voltage is higher than the second inflection point.

In contrast, the present disclosure has a feature that based on an output of the comparator, the charge/discharge controller causes the electrochemical device to be charged **whenever** the voltage is lower than said threshold value (a charge operation), and causes the electrochemical device to be discharged **whenever** the voltage is higher than the threshold value (a discharge operation) so that the voltage of the electrochemical device approaches the threshold value.

As such, it is clear that, at a minimum, Asao fails to disclose the above identified features of claims 1 and 16. Accordingly, claims 1 and 16 and all claims dependent thereon are patentable. Thus, Applicants respectfully request that the Examiner withdraw the rejection under 35 U.S.C. § 102(b).

Claim Rejection - 35 U.S.C. § 103

Claim 21 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Asao. Claims 6-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Asao in view of Yamaguchi et al. (US 2002/0062183). Claim 9 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Asao in view of Inatomi et al. (US 2004/0045818). Claims 14-15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Asao in view of Kimura et al. (US 2002/0195999). The corresponding method claims were also rejected under 35 U.S.C. § 103(a) as being unpatentable over Asao et al. Applicants respectfully traverse these rejections for at least the following reasons.

Applicants incorporate herein the arguments previously advanced in traversal of the rejection under 35 U.S.C. § 102(b) predicated upon Asao. Dependent claims 21 and 22 are free

from the applied art in view of their dependency from independent claims 1 and 16, respectively. Thus, Applicant respectfully requests that the Examiner withdraw the rejection of claim 21 and 22.

Applicants further submit that the additional cited references do not teach or suggest the above identified features of amended claims 1 and 16, which are missing from Asao. Therefore, any combination of Asao with Yamaguchi, Inatomi or Kimura would still fail to disclose the claimed features, and it would not have been obvious to add these features to any such combination.

Furthermore, claims 14 and 20 are directed to the power system having a function of resetting the remaining capacity. The Examiner asserts that, citing column 3, lines 4-22 and column 11, lines 5-28 of Asao, that Asao also discloses that when voltage/storage quantity reaches the voltage/storage quantity at the inflection point (threshold value), the charging voltage/current are reset to a different value which in return resets the remaining capacity. However, Applicants respectfully submit that the underlined Examiner's assertion is incorrect. The "reset" used in the present disclosure means an operation in which, when the value $\Delta V/\Delta C$ becomes equal to the threshold value, the remaining capacity is changed to a predetermined value corresponding to the threshold value. This operation is carried out in order to correct the error in the remaining capacity (see, paragraphs [0081]-[0082] of the present specification) The cited portion of Asao merely discloses turning on/off the charge, or changing the current value or the voltage value, which are not relevant to "reset" the remaining capacity. It is also clear that the remaining cited references fail to disclose or suggest this feature of claims 14 and 20.

Based on the foregoing, Applicants respectfully request that the Examiner withdraw the rejections under 35 U.S.C. § 103(a).

Conclusion

Having fully responded to all matters raised in the Office Action, Applicants submit that all claims are in condition for allowance, an indication for which is respectfully solicited. If there are any outstanding issues that might be resolved by an interview or an Examiner's amendment, the Examiner is requested to call Applicants' attorney at the telephone number shown below.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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